

**REMARKS**

Reconsideration of the instant application is respectfully requested. The present amendment is responsive to the Final Office Action of February 27, 2006, in which claims 1-7 are presently pending.

The Examiner has objected to the amendment filed January 4, 2006, under 35 U.S.C. §132(a) as introducing new matter into the disclosure. The Examiner takes the position that the claim terminology "wherein said electroplating is implemented in the absence of a photolithographically formed masking layer" is broader in scope than what is taught in the disclosure. The amendment has also resulted in claims 1-7 being rejected under 35 U.S.C. §112, first paragraph, as set forth on pages 3-4 of the Final Office Action.

With regard to the art of record, claims 1, 2, 4, 6 and 7 are now rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,503,286 to Nyc, III, et al., in view of U.S. Patent 6,605,534 to Chung, et al. In addition, claim 3 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Nyc, in view of Chung, and further in view of U.S. Patent 5,334,804 to Love, et al. Claim 5 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Nyc, in view of Chung, and further in view of U.S. Patent 6,293,457 to Srivastava, et al. For the following reasons, however, it is respectfully submitted that the application is now in condition for allowance.

With regard to the new matter objection, the §112 rejections and the rejections based on the art of record, claim 1 has now been amended to recite that: (1) the electroplating is implemented without a photoresist present during the electroplating step; and (2) the electroplated metal layer encapsulates exposed outer sidewalls of the seed layer with respect to the TiW layer, as described in paragraph [0015] of the specification

and shown in Figure 6. The Applicants respectfully submits that this amendment overcomes each of the outstanding claim objections and rejections.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing that (1) all elements of the claimed invention are disclosed in the prior art; (2) that the prior art relied upon, coupled with knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references; and (3) that the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988); *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970); *Amgen v. Chugai Pharmaceuticals Co.*, 927 U.S.P.Q.2d, 1016, 1023 (Fed. Cir. 1996).

Thus, under the first element, to establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. §103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Neither Nye nor Chung teach or suggest the claimed structural relationship between the seed layer and the metal plated thereupon (i.e., that the electroplated metal layer encapsulates exposed outer sidewalls of the seed layer). Nye, for instance, does not teach encapsulation by the electroplated layer (100) of the exposed sidewalls of the seed layer (88, 90) with respect to the TiW layer 80. Likewise, the seed layer 24 in Figure 6 of Chung is polished down to the liner layer 22. Thus, the subsequent electroplated metal is only formed on the top surfaces of the seed layer 24, and not over the exposed outer sidewalls thereof, as claimed in the instant application. Moreover, the seed layer 24 in

Chung does not have any exposed outer sidewalls at the time of plating thereon. In the alternative embodiment (Figure 7) of Chung, the topmost surfaces of the seed layer 24 are poisoned and therefore no longer effectively act as a seed layer. Thus, the subsequent plating does not encapsulate exposed sidewalls of the seed layer.

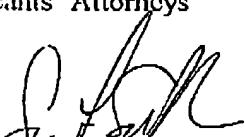
Accordingly, because the combination of Nye and Chung does not teach or suggest an electroplated metal layer partially encapsulating outer sidewalls of the seed layer, claim 1 is not obvious in view of the same, and therefore each of the outstanding §103 rejections has been overcome.

For the above stated reasons, it is respectfully submitted that the present application is now in condition for allowance. No new matter has been entered and no additional fees are believed to be required. However, if any fees are due with respect to this Amendment, please charge them to Deposit Account No. 09-0458 maintained by Applicants' attorneys.

Respectfully submitted,  
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